What Is Claimed Is:

1. A method for treating injury or degeneration of photoreceptors, comprising administering to a subject suffering from such photoreceptor injury or degeneration a therapeutically effective amount of vascular endothelial growth factor 2 (VEGF-2).

2. The method of claim 1, wherein the injury or degeneration of the photoreceptors is associated with angioid streaks, retinitis pigmentosa, Kearn's Syndrome, pigment pattern dystrophies, retinal perforations, retinitis, chorioretinitis, cytomegalovirus retinitis, acute retinal necrosis syndrome, central alveolar choroidal dystrophy, dominant drusen, hereditary hemorrhagic macular dystrophy, North Carolina macular dystrophy, pericentral choroidal dystrophy, adult foveomacular dystrophy, benign concentric annular macular dystrophy, central aureolar pigment epithelial dystrophy, congenital macular coloboma, dominantly inherited cystoid macular edema, familial foveal retinoschisis, fenestrated sheen macular dystrophy, progressive foveal dystrophy, slowly progressive macular dystrophy, Sorsby's pseudoinflammatory dystrophy, cone-rod dystrophy, progressive cone dystrophy, Leber's congenital amaurosis, Goldman-Favre syndrome, Bardet-Biedl syndrome, Bassen-Kornzweig syndrome (abetalipoproteinemia), Best disease (vitelliform dystrophy), choroidemia, gyrate atrophy, congenital amaurosis, Refsum syndrome, Stargardt disease, Usher syndrome, age-related macular degeneration, diabetic retinopathy, peripheral vitreoretinopathy, photic retinopathy, surgery-induced retinopathy, viral retinopathy, ischemic retinopathy, retinal detachment or traumatic retinopathy.

3. The method of claim 1 wherein the VEGF-2 comprises the amino acid sequence set forth in SEQ ID NO:4 or a variant, or a derivative thereof.

4. The method of claim 3 wherein the VEGF-2 has the amino acid sequence set forth in SEQ ID NO:4.

5. The method of claim 1 wherein the VEGF-2 comprises VEGF-2 attached to a water soluble polymer.

6. The method of claim 6 wherein the water soluble polymer is polyethylene glycol.

7. The method of claim 1 wherein the VEGF-2 comprises a truncated VEGF-2.

8. The method of claim 1 wherein VEGF-2 is administered at a dose between about 0.005 mg/kg and about 50 mg/kg body weight.

9. The method of claim 8 wherein VEGF-2 is administered at a dose between about 0.05 mg/kg and about 5 mg/kg body weight.

10. The method of claim 1, wherein VEGF-2 is administered as a sustained-release pharmaceutical composition.

11. The method of claim 1, wherein VEGF-2 is administered as a topical, oral or parenteral pharmaceutical composition.

12. The method of claim 1, wherein VEGF-2 is administered by cell therapy or gene therapy means wherein cells have been modified to produce and secrete VEGF-2.

13. The method of claim 12, wherein the cells have been modified ex vivo.

14. The method of claim 12, wherein the cells have been modified in vivo.

15. The method of claim 1, further comprising administering to the patient an effective amount of a second therapeutic agent for treating retinal disease.

16. The method of claim 15, wherein said second therapeutic agent is selected from the group consisting of glial cell line-derived neurotrophic factor, brain derived neurotrophic factor, neurotrophin-3, neurotrophin-4/5, neurotrophin-6, insulin-like growth factor, ciliary neurotrophic factor, acidic

and basic fibroblast growth factors, fibroblast growth factor-5, transforming growth factor, and cocaine-amphetamine regulated transcript, epidermal growth factor, leukemia inhibitory factor, an interleukin, an interferon, and a colony stimulating factor.

17. The method of claim 1, wherein VEGF-2 is administered by a delivery means selected from the group consisting of ocular inserts, ocular injection or ocular implants.

18. A method for providing photoreceptor cells for implantation comprising culturing dissociated photoreceptor cells in the presence of VEGF-2.

19. A composition comprising an isolated antibody, wherein said antibody specially binds the polypeptide of SEQ ID NO:2 or the polypeptide encoded by the human cDNA in ATCC Deposit No. 75698 or 97149.

20. The composition of claim 19, wherein said antibody is selected from the group consisting of: polyclonal, monoclonal, chimeric, humanized, a human antibody, a single-chain antibody, an antigen-binding fragment, a murine antibody fragment, a human antibody fragment, or a single-chain antibody fragment.

21. The composition of claim 20, wherein the single-chain antibody fragment is selected from the group consisting of: a Fv fragment, a Fab fragment, a Fab' fragment, a F(ab')2 fragment, a light chain variable domain, a heavy chain variable domain, a portion of the hinge region, a portion of the CH1 domain, a portion of the CH2 domain, a portion of the CH3 domain.

22. The composition of claim 19, wherein said antibody specifically binds a polypeptide consisting of amino acid residues selected from the group consisting of: amino acids -23 to +1 of SEQ ID NO:2, amino acid residues 1 to 50 of SEQ ID NO:2, amino acid residues 50 to 100 of SEQ ID NO:2, amino acid residues 100 to 150 of SEQ ID NO:2, amino acid residues 150 to 200 of SEQ ID NO:2, amino acid residues 200 to 250 of SEQ ID NO:2, amino acid residues 250 to 300 of SEQ ID NO:2, amino acid residues 300 to 350 of SEQ ID NO:2, or amino acid residues 350 to 396 of SEQ ID NO:2.

23. The composition of claim 19, wherein said antibody has a Kd selected from the group consisting of: less than 1X10-10, less than 1X10-11, less than 1X10-12, less than 1X10-13, or less than 1X10-14.

24. The composition of claim 19, wherein said antibody only binds polypeptides encoded by polynucleotides which hybridize to the polynucleotide sequence of SEQ ID NO:1 under stringent hybridization conditions.

25. The composition of claim 19, wherein said antibody does not bind any other analog, ortholog, or homolog of the polypeptide sequence of SEQ ID NO:2 or the full length polypeptide encoded by the human cDNA contained in ATCC deposit No. 75698 or 97149.

26. The composition of claim 19, wherein said antibody does not bind a polypeptide selected from the group consisting of: less than 95%

identity to SEQ ID NO:2 or the full length polypeptide encoded by the human cDNA contained in ATCC Deposit No. 75698 or 97149, less than 90% identity to SEQ ID NO:2 or the full length polypeptide encoded by the human cDNA contained in ATCC deposit No. 75698 or 97149, less than 85% identity to SEQ ID NO:2 or the full length polypeptide encoded by the human cDNA contained in ATCC Deposit No. 75698 or 97149, or less than 80% identity to SEQ ID NO:2 or the full length polypeptide encoded by the human cDNA contained in ATCC Deposit No. 75698 or 97149.

27. The composition of claim 19, wherein said antibody is selected from the group consisting of monoclonal antibody 12E2; 13A2; 15C2; 13D6; 13E6; 19A3; 8G11; 11A8, 15E10, 9B4, and 13G11.

28. A composition comprising:

(a) a polypeptide fragment of SEQ ID NO:2 or a polypeptide fragment encoded by the human cDNA contained in ATCC deposit No. 75698 or 97149; and

(b) an isolated antibody.

29. The composition of claim 28, wherein said antibody specially binds the polypeptide of SEQ ID NO:2 or the polypeptide encoded by the human cDNA in ATCC Deposit No. 75698 or 97149.

30. The composition of claim 28, wherein said antibody is selected from the group consisting of monoclonal antibody 12E2; 13A2; 15C2; 13D6; 13E6; 19A3; 8G11; 11A8, 15E10, 9B4, and 13G11.

31. The composition of claim 28, wherein said polypeptide fragment comprises a fragment is selected from the group consisting of: a N-terminal deletion fragment described by the general formula m-396 of SEQ ID NO:2, a C-terminal deletion fragment described by the general formula -23-n, a N-terminal and C-terminal deletion fragment described by the general formula m-n, a C-terminal deletion fragment described by the general formula +9-n, a mature fragment of SEQ ID NO:2 or encoded by the human cDNA in ATCC Deposit No. 75698 or 97149, a proprotein fragment of SEQ ID NO:2 or encoded by the human cDNA in ATCC Deposit No. 75698 or 97149, or a full length fragment of SEQ ID NO:2 or encoded by the human cDNA in ATCC Deposit No. 75698 or 97149.

32. The composition of claim 28, wherein said polypeptide fragment comprises amino acid residues R-204 to S-396 of SEQ ID NO:2 or amino acid residues F-9 to R-204 of SEQ ID NO:2.

33. The composition of claim 28, wherein said composition comprises a first polypeptide fragment of amino acid residues R-204 to S-396 of SEQ ID NO:2 and a second polypeptide fragment of amino acid residues F-9 to R-203 of SEQ ID NO:2.

34. A composition comprising:

(a) a first polypeptide fragment of SEQ ID NO:2 or a first polypeptide fragment encoded by the human cDNA contained in ATCC deposit No. 75698 or 97149; and

(b) a second polypeptide fragment of SEQ ID NO:2 or a second polypeptide fragment encoded by the human cDNA contained in ATCC deposit No. 75698 or 97149; wherein said first polypeptide fragment is linked to said second polypeptide fragment.

35. The composition of claim 34, wherein said linkage is performed by a member selected from the group consisting of: an antibody, a hinge, a glycine linker, a serine linker, or a proline linker, noncovalent interactions, disulfide bonds, or covalent interactions.

36. A method of proliferating endothelial cells in a patient comprising administering to the patient the composition of claim 19.

37. A method of proliferating endothelial cells in a patient comprising administering to the patient the composition of claim 28.

38. A method of proliferating endothelial cells in a patient comprising administering to the patient the composition of claim 34.

39. The method of claim 36, wherein said method stimulates angiogenesis or lymphangiogenesis.

40. The method of claim 37, wherein said method stimulates angiogenesis or lymphangiogenesis.

41. The method of claim 38, wherein said method stimulates angiogenesis or lymphangiogenesis.

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